M.Sc. 3rd Semester Examination, 2013

REMOTE SENSING AND GIS

PAPER — RSG-301(Gr. A + B)

Full Marks : 40

Time : 2 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

GROUP – A

Answer any *two* questions

1. What is level based classification? Explain different criteria of LU/LC classification. Discuss the process for identification of double crop areas with suitable flowchart. 2 + 4 + 4

2. Enumerate various geometric (spatial) and hydrological properties (aspatial) required for parametric watershed modeling with suitable example.   10

3. (a) Explain 'Hydrologic Cycle' in the context of land use/land cover analysis and environmental management using RS and GIS.

   (b) What do you mean by Hydrogeomorphological unit ? 7 + 3

4. (a) What do you mean 'Subsurface Water' ?

   (b) Enumerate the tonal characteristics of an area with high moisture content in optical and microwave RS data.

   (c) Mention the geological and geomorphological features easily identifiable in RS data for locating groundwater potential zone. 2 + 3 + 5

GROUP – B

Answer any *two* questions

1. Make a list of the morphometric techniques normally used for the quantitative analysis of the physical properties of watersheds. Evaluate the methodology and application of any three of those. 4 + 6

2. "Sufficient rainfall does not always ensure sufficient groundwater recharge"— explain with reference to varying lithological conditions. How electrical resistivity and seismic refraction help in groundwater targeting?   5 + 5

3. How cloud and snow are distinguished in different parts of the electromagnetic spectrum? What are the advantages of thermal and microwave remote sensing in soil moisture estimation.   10

4. What is the role of Remote Sensing in water quality monitoring? How could oil-films and hot plumer in water be detected by remote sensing?   6 + 2 + 2

―――――――